

CLAIMS:

1. Transmitter (Tx₁, Tx₂) for simultaneously transmitting at least a first (s'₁) and a second (s'₂) signal, the first signal (s'₁) being modulated according to a first modulation constellation, the second signal (s'₂) being modulated according to a second modulation constellation, wherein the transmitter is arranged to pre-code at least the first signal (s'₁) through a modification of the first modulation constellation so as to prevent a correlation between the at least first (s'₁) and second (s'₂) simultaneously transmitted signals.
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2. Transmitter (Tx₁, Tx₂) according to claim 1, wherein the pre-coding of at least the first signal (s'₁) comprises a rotation of the first modulation constellation through a first angle.
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3. Transmitter (Tx₁, Tx₂) according to claim 1, wherein the pre-coding of at least the first signal (s'₁) comprises a change of the order of the first modulation constellation.
- 15 4. Transmitter (Tx₁, Tx₂) according to claim 3, wherein the pre-coding further comprises a change of the number of simultaneously transmitted signals (s'₁, s'₂).
5. Transmitter (Tx₁, Tx₂) according to claim 1, wherein the transmitter is arranged to pre-code at least the first (s'₁) signal after receipt of a first signal from a receiver (Rx₁, Rx₂) of the at least first (s'₁) and second (s'₂) simultaneously transmitted signals.
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6. Transmitter (Tx₁, Tx₂) according to claim 1, wherein the transmitter is arranged to transmit a second signal to a receiver (Rx₁, Rx₂) of the at least first (s'₁) and second signals (s'₂) in order to notify the receiver about the pre-coding of at least the first (s'₁) signal.
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7. Transmitter (Tx₁, Tx₂) according to claim 1,2,3 and 4, wherein the first and second modulation constellations are M-ary QAM modulation constellations.

8. Receiver (Rx₁, Rx₂) for simultaneously receiving at least a first (s'₁) and a second (s'₂) signal from a transmitter (Tx₁, Tx₂), the first received signal (s'₁) being modulated according to a first modulation constellation, the second received signal (s'₂) being modulated according to a second modulation constellation, in which at least the first received signal (s'₁) is pre-coded through a modification of the first modulation constellation so as to prevent a correlation between the at least first (s'₁) and second (s'₂) simultaneously received signals.
9. Receiver (Rx₁, Rx₂) according to claim 8, wherein the pre-coding of the first (s'₁) received signal comprises a rotation of the first modulation constellation.
10. Receiver (Rx₁, Rx₂) according to claim 8, wherein the pre-coding of the first (s'₁) received signal comprises a change of the order of the first modulation constellation.
11. Receiver (Rx₁, Rx₂) according to claim 8, wherein the pre-coding further comprises a change of the number of simultaneously received signals (s'₁, s'₂).
12. Receiver (Rx₁, Rx₂) according to claim 8, wherein the receiver is arranged to transmit a first signal to the transmitter in a response to which the transmitter is arranged to pre-code at least the first (s'₁) signal.
13. Receiver (Rx₁, Rx₂) according to claim 8, wherein the receiver is arranged to receive a second signal from the transmitter (Tx₁, Tx₂) in a response to the transmitter pre-coding at least the first (s'₁) signal.
14. Receiver (Rx₁, Rx₂) according to claim 8, 9, 10 and 11, wherein the first and second modulation constellations are M-ary QAM modulation constellations.
15. Transceiver comprising a transmitter according to claim 1.
16. Transceiver according to claim 15, further comprising a receiver according to claim 8.
17. Wireless device comprising a transmitter according to claim 1.

18. Telecommunication system comprising a transmitter according to claim 1.